

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/530,753
Source: PGF
Date Processed by STIC: 3/22/06

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 03/22/2006

PATENT APPLICATION: US/10/530,753

TIME: 15:26:38

Input Set : A:\SEQLIST223002100300.TXT

Output Set: N:\CRF4\03222006\J530753.raw

4 <110> APPLICANT: Chiron Corporation
 5 Pizza, Mariagrazia
 7 <120> TITLE OF INVENTION: Polypeptide-Vaccines for Broad
 8 Protection Against Hypervirulent Meningococcal Lineages
 11 <130> FILE REFERENCE: 22300-21003.00
 13 <140> CURRENT APPLICATION NUMBER: 10/530,753
 C--> 14 <141> **CURRENT FILING DATE: 2005-04-08**
 16 <150> PRIOR APPLICATION NUMBER: WO PCT/IB03/04848
 17 <151> PRIOR FILING DATE: 2003-10-02
 19 <150> PRIOR APPLICATION NUMBER: GB 0309115.4
 20 <151> PRIOR FILING DATE: 2003-04-22
 22 <150> PRIOR APPLICATION NUMBER: GB 0305831.0
 23 <151> PRIOR FILING DATE: 2003-03-13
 25 <150> PRIOR APPLICATION NUMBER: GB 0223741.0
 26 <151> PRIOR FILING DATE: 2002-10-11
 28 <160> NUMBER OF SEQ ID NOS: 12
 30 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 32 <210> SEQ ID NO: 1
 33 <211> LENGTH: 350
 34 <212> TYPE: PRT
 35 <213> ORGANISM: N. meningitidis
 37 <400> SEQUENCE: 1
 38 Met Lys His Phe Pro Ser Lys Val Leu Thr Thr Ala Ile Leu Ala Thr
 39 1 5 10 15
 40 Phe Cys Ser Gly Ala Leu Ala Ala Thr Asn Asp Asp Asp Val Lys Lys
 41 20 25 30
 42 Ala Ala Thr Val Ala Ile Ala Ala Ala Tyr Asn Asn Gly Gln Glu Ile
 43 35 40 45
 44 Asn Gly Phe Lys Ala Gly Glu Thr Ile Tyr Asp Ile Asp Glu Asp Gly
 45 50 55 60
 46 Thr Ile Thr Lys Lys Asp Ala Thr Ala Ala Asp Val Glu Ala Asp Asp
 47 65 70 75 80
 48 Phe Lys Gly Leu Gly Leu Lys Lys Val Val Thr Asn Leu Thr Lys Thr
 49 85 90 95
 50 Val Asn Glu Asn Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala Glu
 51 100 105 110
 52 Ser Glu Ile Glu Lys Leu Thr Thr Lys Leu Ala Asp Thr Asp Ala Ala
 53 115 120 125
 54 Leu Ala Asp Thr Asp Ala Ala Leu Asp Ala Thr Thr Asn Ala Leu Asn
 55 130 135 140
 56 Lys Leu Gly Glu Asn Ile Thr Thr Phe Ala Glu Thr Lys Thr Asn
 57 145 150 155 160
 58 Ile Val Lys Ile Asp Glu Lys Leu Glu Ala Val Ala Asp Thr Val Asp

RAW SEQUENCE LISTING

DATE: 03/22/2006

PATENT APPLICATION: US/10/530,753

TIME: 15:26:38

Input Set : A:\SEQLIST223002100300.TXT

Output Set: N:\CRF4\03222006\J530753.raw

```

59          165          170          175
60 Lys His Ala Glu Ala Phe Asn Asp Ile Ala Asp Ser Leu Asp Glu Thr
61          180          185          190
62 Asn Thr Lys Ala Asp Glu Ala Val Lys Thr Ala Asn Glu Ala Lys Gln
63          195          200          205
64 Thr Ala Glu Glu Thr Lys Gln Asn Val Asp Ala Lys Val Lys Ala Ala
65          210          215          220
66 Glu Thr Ala Ala Gly Lys Ala Glu Ala Ala Ala Gly Thr Ala Asn Thr
67 225          230          235          240
68 Ala Ala Asp Lys Ala Glu Ala Val Ala Ala Lys Val Thr Asp Ile Lys
69          245          250          255
70 Ala Asp Ile Ala Thr Asn Lys Asp Asn Ile Ala Lys Lys Ala Asn Ser
71          260          265          270
72 Ala Asp Val Tyr Thr Arg Glu Glu Ser Asp Ser Lys Phe Val Arg Ile
73          275          280          285
74 Asp Gly Leu Asn Ala Thr Thr Glu Lys Leu Asp Thr Arg Leu Ala Ser
75          290          295          300
76 Ala Glu Lys Ser Ile Ala Asp His Asp Thr Arg Leu Asn Gly Leu Asp
77 305          310          315          320
78 Lys Thr Val Ser Asp Leu Arg Lys Glu Thr Arg Gln Gly Leu Ala Glu
79          325          330          335
80 Gln Ala Ala Leu Ser Gly Leu Phe Gln Pro Tyr Asn Val Gly
81          340          345          350
84 <210> SEQ ID NO: 2
85 <211> LENGTH: 327
86 <212> TYPE: PRT
87 <213> ORGANISM: N. meningitidis
89 <400> SEQUENCE: 2
90 Ala Thr Asn Asp Asp Asp Val Lys Lys Ala Ala Thr Val Ala Ile Ala
91 1          5          10          15
92 Ala Ala Tyr Asn Asn Gly Gln Glu Ile Asn Gly Phe Lys Ala Gly Glu
93          20          25          30
94 Thr Ile Tyr Asp Ile Asp Glu Asp Gly Thr Ile Thr Lys Lys Asp Ala
95          35          40          45
96 Thr Ala Ala Asp Val Glu Ala Asp Asp Phe Lys Gly Leu Gly Leu Lys
97          50          55          60
98 Lys Val Val Thr Asn Leu Thr Lys Thr Val Asn Glu Asn Lys Gln Asn
99 65          70          75          80
100 Val Asp Ala Lys Val Lys Ala Ala Glu Ser Glu Ile Glu Lys Leu Thr
101          85          90          95
102 Thr Lys Leu Ala Asp Thr Asp Ala Ala Leu Ala Asp Thr Asp Ala Ala
103          100          105          110
104 Leu Asp Ala Thr Thr Asn Ala Leu Asn Lys Leu Gly Glu Asn Ile Thr
105          115          120          125
106 Thr Phe Ala Glu Glu Thr Lys Thr Asn Ile Val Lys Ile Asp Glu Lys
107          130          135          140
108 Leu Glu Ala Val Ala Asp Thr Val Asp Lys His Ala Glu Ala Phe Asn
109 145          150          155          160
110 Asp Ile Ala Asp Ser Leu Asp Glu Thr Asn Thr Lys Ala Asp Glu Ala

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/530,753

DATE: 03/22/2006

TIME: 15:26:38

Input Set : A:\SEQLIST223002100300.TXT

Output Set: N:\CRF4\03222006\J530753.raw

```

111          165          170          175
112 Val Lys Thr Ala Asn Glu Ala Lys Gln Thr Ala Glu Glu Thr Lys Gln
113          180          185          190
114 Asn Val Asp Ala Lys Val Lys Ala Ala Glu Thr Ala Ala Gly Lys Ala
115          195          200          205
116 Glu Ala Ala Ala Gly Thr Ala Asn Thr Ala Ala Asp Lys Ala Glu Ala
117          210          215          220
118 Val Ala Ala Lys Val Thr Asp Ile Lys Ala Asp Ile Ala Thr Asn Lys
119 225          230          235          240
120 Asp Asn Ile Ala Lys Lys Ala Asn Ser Ala Asp Val Tyr Thr Arg Glu
121          245          250          255
122 Glu Ser Asp Ser Lys Phe Val Arg Ile Asp Gly Leu Asn Ala Thr Thr
123          260          265          270
124 Glu Lys Leu Asp Thr Arg Leu Ala Ser Ala Glu Lys Ser Ile Ala Asp
125          275          280          285
126 His Asp Thr Arg Leu Asn Gly Leu Asp Lys Thr Val Ser Asp Leu Arg
127          290          295          300
128 Lys Glu Thr Arg Gln Gly Leu Ala Glu Gln Ala Ala Leu Ser Gly Leu
129 305          310          315          320
130 Phe Gln Pro Tyr Asn Val Gly
131          325
134 <210> SEQ ID NO: 3
135 <211> LENGTH: 248
136 <212> TYPE: PRT
137 <213> ORGANISM: N. meningitidis
139 <400> SEQUENCE: 3
140 Val Ala Ala Asp Ile Gly Ala Gly Leu Ala Asp Ala Leu Thr Ala Pro
141 1          5          10          15
142 Leu Asp His Lys Asp Lys Gly Leu Gln Ser Leu Thr Leu Asp Gln Ser
143          20          25          30
144 Val Arg Lys Asn Glu Lys Leu Lys Leu Ala Ala Gln Gly Ala Glu Lys
145          35          40          45
146 Thr Tyr Gly Asn Gly Asp Ser Leu Asn Thr Gly Lys Leu Lys Asn Asp
147          50          55          60
148 Lys Val Ser Arg Phe Asp Phe Ile Arg Gln Ile Glu Val Asp Gly Gln
149 65          70          75          80
150 Leu Ile Thr Leu Glu Ser Gly Glu Phe Gln Val Tyr Lys Gln Ser His
151          85          90          95
152 Ser Ala Leu Thr Ala Phe Gln Thr Glu Gln Ile Gln Asp Ser Glu His
153          100          105          110
154 Ser Gly Lys Met Val Ala Lys Arg Gln Phe Arg Ile Gly Asp Ile Ala
155          115          120          125
156 Gly Glu His Thr Ser Phe Asp Lys Leu Pro Glu Gly Gly Arg Ala Thr
157          130          135          140
158 Tyr Arg Gly Thr Ala Phe Gly Ser Asp Asp Ala Gly Gly Lys Leu Thr
159 145          150          155          160
160 Tyr Thr Ile Asp Phe Ala Ala Lys Gln Gly Asn Gly Lys Ile Glu His
161          165          170          175
162 Leu Lys Ser Pro Glu Leu Asn Val Asp Leu Ala Ala Ala Asp Ile Lys

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/530,753

DATE: 03/22/2006

TIME: 15:26:38

Input Set : A:\SEQLIST223002100300.TXT

Output Set: N:\CRF4\03222006\J530753.raw

```

163          180          185          190
164 Pro Asp Gly Lys Arg His Ala Val Ile Ser Gly Ser Val Leu Tyr Asn
165          195          200          205
166 Gln Ala Glu Lys Gly Ser Tyr Ser Leu Gly Ile Phe Gly Gly Lys Ala
167          210          215          220
168 Gln Glu Val Ala Gly Ser Ala Glu Val Lys Thr Val Asn Gly Ile Arg
169 225          230          235          240
170 His Ile Gly Leu Ala Ala Lys Gln
171          245
174 <210> SEQ ID NO: 4
175 <211> LENGTH: 179
176 <212> TYPE: PRT
177 <213> ORGANISM: N. meningitidis
179 <400> SEQUENCE: 4
180 Val Ser Ala Val Ile Gly Ser Ala Ala Val Gly Ala Lys Ser Ala Val
181 1          5          10          15
182 Asp Arg Arg Thr Thr Gly Ala Gln Thr Asp Asp Asn Val Met Ala Leu
183          20          25          30
184 Arg Ile Glu Thr Thr Ala Arg Ser Tyr Leu Arg Gln Asn Asn Gln Thr
185          35          40          45
186 Lys Gly Tyr Thr Pro Gln Ile Ser Val Val Gly Tyr Asn Arg His Leu
187          50          55          60
188 Leu Leu Leu Gly Gln Val Ala Thr Glu Gly Glu Lys Gln Phe Val Gly
189 65          70          75          80
190 Gln Ile Ala Arg Ser Glu Gln Ala Ala Glu Gly Val Tyr Asn Tyr Ile
191          85          90          95
192 Thr Val Ala Ser Leu Pro Arg Thr Ala Gly Asp Ile Ala Gly Asp Thr
193          100          105          110
194 Trp Asn Thr Ser Lys Val Arg Ala Thr Leu Leu Gly Ile Ser Pro Ala
195          115          120          125
196 Thr Gln Ala Arg Val Lys Ile Val Thr Tyr Gly Asn Val Thr Tyr Val
197          130          135          140
198 Met Gly Ile Leu Thr Pro Glu Glu Gln Ala Gln Ile Thr Gln Lys Val
199 145          150          155          160
200 Ser Thr Thr Val Gly Val Gln Lys Val Ile Thr Leu Tyr Gln Asn Tyr
201          165          170          175
202 Val Gln Arg
206 <210> SEQ ID NO: 5
207 <211> LENGTH: 168
208 <212> TYPE: PRT
209 <213> ORGANISM: N. meningitidis
211 <400> SEQUENCE: 5
212 Ala Thr Tyr Lys Val Asp Glu Tyr His Ala Asn Ala Arg Phe Ala Ile
213 1          5          10          15
214 Asp His Phe Asn Thr Ser Thr Asn Val Gly Gly Phe Tyr Gly Leu Thr
215          20          25          30
216 Gly Ser Val Glu Phe Asp Gln Ala Lys Arg Asp Gly Lys Ile Asp Ile
217          35          40          45
218 Thr Ile Pro Ile Ala Asn Leu Gln Ser Gly Ser Gln His Phe Thr Asp

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/530,753

DATE: 03/22/2006

TIME: 15:26:38

Input Set : A:\SEQLIST223002100300.TXT

Output Set: N:\CRF4\03222006\J530753.raw

```

219      50      55      60
220 His Leu Lys Ser Ala Asp Ile Phe Asp Ala Ala Gln Tyr Pro Asp Ile
221 65      70      75      80
222 Arg Phe Val Ser Thr Lys Phe Asn Phe Asn Gly Lys Lys Leu Val Ser
223      85      90      95
224 Val Asp Gly Asn Leu Thr Met His Gly Lys Thr Ala Pro Val Lys Leu
225      100      105      110
226 Lys Ala Glu Lys Phe Asn Cys Tyr Gln Ser Pro Met Glu Lys Thr Glu
227      115      120      125
228 Val Cys Gly Gly Asp Phe Ser Thr Thr Ile Asp Arg Thr Lys Trp Gly
229      130      135      140
230 Met Asp Tyr Leu Val Asn Val Gly Met Thr Lys Ser Val Arg Ile Asp
231 145      150      155      160
232 Ile Gln Ile Glu Ala Ala Lys Gln
233      165
236 <210> SEQ ID NO: 6
237 <211> LENGTH: 464
238 <212> TYPE: PRT
239 <213> ORGANISM: N. meningitidis
241 <400> SEQUENCE: 6
242 Ser Pro Asp Val Lys Ser Ala Asp Thr Leu Ser Lys Pro Ala Ala Pro
243 1      5      10      15
244 Val Val Ser Glu Lys Glu Thr Glu Ala Lys Glu Asp Ala Pro Gln Ala
245      20      25      30
246 Gly Ser Gln Gly Gln Gly Ala Pro Ser Ala Gln Gly Ser Gln Asp Met
247      35      40      45
248 Ala Ala Val Ser Glu Glu Asn Thr Gly Asn Gly Gly Ala Val Thr Ala
249      50      55      60
250 Asp Asn Pro Lys Asn Glu Asp Glu Val Ala Gln Asn Asp Met Pro Gln
251 65      70      75      80
252 Asn Ala Ala Gly Thr Asp Ser Ser Thr Pro Asn His Thr Pro Asp Pro
253      85      90      95
254 Asn Met Leu Ala Gly Asn Met Glu Asn Gln Ala Thr Asp Ala Gly Glu
255      100      105      110
256 Ser Ser Gln Pro Ala Asn Gln Pro Asp Met Ala Asn Ala Ala Asp Gly
257      115      120      125
258 Met Gln Gly Asp Asp Pro Ser Ala Gly Gly Gln Asn Ala Gly Asn Thr
259      130      135      140
260 Ala Ala Gln Gly Ala Asn Gln Ala Gly Asn Asn Gln Ala Ala Gly Ser
261 145      150      155      160
262 Ser Asp Pro Ile Pro Ala Ser Asn Pro Ala Pro Ala Asn Gly Gly Ser
263      165      170      175
264 Asn Phe Gly Arg Val Asp Leu Ala Asn Gly Val Leu Ile Asp Gly Pro
265      180      185      190
266 Ser Gln Asn Ile Thr Leu Thr His Cys Lys Gly Asp Ser Cys Ser Gly
267      195      200      205
268 Asn Asn Phe Leu Asp Glu Glu Val Gln Leu Lys Ser Glu Phe Glu Lys
269      210      215      220
270 Leu Ser Asp Ala Asp Lys Ile Ser Asn Tyr Lys Lys Asp Gly Lys Asn

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/530,753

DATE: 03/22/2006

TIME: 15:26:39

Input Set : A:\SEQLIST223002100300.TXT

Output Set: N:\CRF4\03222006\J530753.raw

L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date